

DETERMINATION OF ASH

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INTRODUCTION

The principle of ashing is to burn off the organic matter and to determine the inorganic matter remained. Heating is carried out in two stages:- firstly to remove the water present and to char the sample thoroughly; and finally ashing at 550°C in a muffle furnace.

This method is applicable to all food materials.

I SAMPLE PREPARATION

Randomly collect meat sample (≤ 100 g) and pass through a manual mincer twice or chop very finely and mix thoroughly.

Place minced meat in small plastic bag.

II INSTRUMENT AND APPARATUS

Muffle furnace, temperature (0-1200)°C

Crucibles and lids

Thong

Thick gloves

III ANALYTICAL PROCEDURE

1. The crucible and lid is first placed in the furnace at 550°C overnight to ensure that impurities on the surface of crucible is burnt off. Cool the crucible in the desiccator (30 mins).
2. Weigh the crucible and lid to 3 decimal places.
3. Weigh about 5g meat sample from (I) into the crucible. Heat over low bunsen flame with lid half covered. When fumes are no longer produced, place crucible and lid in furnace.
4. Heat at 550°C overnight. During heating, do not cover with the lid. Place the lid on after complete heating to prevent loss of fluffy ash. Cool down in the desiccator.
5. Weigh the ash with crucible and lid to 3 decimal places.
6. Ash must be white or light grey. If not, return the crucible and lid to the furnace for further ashing.

IV CALCULATION

$$\text{Ash Content (\%)} = \frac{\text{Wt of ash}}{\text{Wt of sample}} \times 100$$

REFERENCE

Official methods of analysis of the Association of Official Analytical Chemists 13th Ed., 1980: 289, 508. See 18.025, 31.012.